



*Release of
November 2008
MCAS Retest Items*

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Massachusetts Department of
Elementary and Secondary Education**



This document was prepared by the
Massachusetts Department of Elementary and Secondary Education
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Commissioner of Elementary and Secondary Education

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Commissioner's Foreword

Dear Colleagues:

The vision of the Department of Elementary and Secondary Education is to work in partnership with policy makers, communities, parents, school districts, and students to build a system that will prepare all students to succeed as productive and contributing members of our democratic society and the global economy. To assist in the achievement of this vision, the Department regularly releases MCAS test items to provide information regarding the kinds of knowledge and skills that students are expected to demonstrate. In keeping with our past practice of releasing all of the test items on which student results are based, I am pleased to announce all questions from the November 2008 retests are included in this document.

The *Release of November 2008 MCAS Retest Items* is available only through the Department website at www.doe.mass.edu/mcas/testitems.html. The test items for both ELA and Mathematics can be easily printed from this site. I encourage educators to use the relevant sections of this document together with their *Test Item Analysis Report Summaries* and *Test Item Analysis Rosters* as guides for planning changes in curriculum and instruction that may be needed to ensure that schools and districts make regular progress in improving student performance.

Thank you for your support as we work together to strengthen education for our students in Massachusetts.

Sincerely,

Mitchell D. Chester, Ed.D.

Commissioner of Elementary and Secondary Education

I. Document Purpose and Structure

Document Purpose and Structure

Purpose

The purpose of this document is to share with educators and the public all of the test items from the November 2008 MCAS English Language Arts and Mathematics Retests. Local educators will be able to use this information to identify strengths and weaknesses in their curriculum and instruction, and to guide the changes necessary to more effectively meet their students' needs.

This document is also intended to be used by school and district personnel as a companion document to the test item analysis reports. Each school in which a retest was administered receives a November Retest *Test Item Analysis Report Summary* and a *Test Item Analysis Roster* for English Language Arts and Mathematics. These reports provide data generated from student responses. Each report lists, for the school receiving the report, the names of all enrolled students who took the November 2008 Retest in that report's content area, and shows how each student answered each test question (item). The report labels each item as multiple-choice, open-response, short-answer, or writing prompt and identifies the item's MCAS reporting category. Item numbers in this document correlate directly to the "Item Numbers" in the test item analysis reports.

Structure

Chapters II and III of this document contain, respectively, information for the November 2008 English Language Arts and Mathematics Retests. Each of these chapters has three main sections.

The **first section** introduces the chapter by listing the Massachusetts *Curriculum Framework* content strands assessed by MCAS in that chapter's content area. These content strands are identical to the MCAS reporting categories under which retest results are reported to schools and districts. The first section also provides the Web address for the relevant *Framework* and the page numbers on which the learning standards assessed by the test items in the chapter can be found. In addition, there is a brief overview of the retest (number of test sessions, types of items, reference materials allowed, and cross-referencing information).

The **second section** contains the test items used to generate November 2008 MCAS student results for that chapter's content area. With the exception of the ELA Composition writing prompt, the test items in this document are shown in the same order and basic format in which they were presented in the test booklets. The Mathematics Reference Sheet used by students during MCAS Mathematics test sessions is inserted immediately following the last question in the Mathematics chapter.

Due to copyright restrictions, certain English Language Arts reading passages are not available on the Department's website. Copyright information for all reading passages is provided in the document. Note that the Department has obtained permission to post all ELA passages that appear on its website. While the Department grants permission to use the posted test items for educational purposes, it cannot grant or transfer permission to use the passages that accompany the items. Such permission must be obtained directly from the holder of the copyright. For further information, contact Student Assessment Services at 781-338-3625.

The **final section** of each chapter is a table that cross-references each item with its MCAS reporting category and with the *Framework* standard it assesses. Correct answers to multiple-choice questions and Mathematics retest short-answer questions are also listed in the table.

Materials presented in this document are **not** formatted **exactly** as they appeared in student test booklets. For example, in order to present items most efficiently in this document, the following modifications have been made:

- Some fonts and/or font sizes may have been changed and/or reduced.
- Some graphics may have been reduced in size from their appearance in student test booklets; however, they maintain the same proportions in each case.
- All references to page numbers in answer booklets have been deleted from the directions that accompany test items.
- The four lined pages provided for students' initial English Language Arts Composition retest drafts are omitted.

II. English Language Arts Retest

A. Composition

B. Reading Comprehension

English Language Arts Retest

Test Structure

The English Language Arts retest was presented in the following two parts:

- the ELA Composition retest, which used a writing prompt to assess learning standards from the Massachusetts *English Language Arts Curriculum Framework*'s **Composition** strand
- the ELA Reading Comprehension retest, which used multiple-choice and open-response questions (items) to assess learning standards from the *Curriculum Framework*'s **Language** and **Reading and Literature** strands

A. Composition

The English Language Arts (ELA) Composition retest was based on learning standards in the Composition strand of the Massachusetts *English Language Arts Curriculum Framework* (2001). These learning standards appear on pages 72–83 of the *Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Composition retest results are reported under the **Composition** reporting category.

Test Sessions and Content Overview

The ELA Composition retest included two separate test sessions, administered on the same day with a short break between sessions. During the first session, each student wrote an initial draft of a composition in response to the writing prompt on the next page. During the second session, each student revised his or her draft and submitted a final composition, which was scored in the areas of Topic Development and Standard English Conventions. The Scoring Guides for the MCAS English Language Arts Composition are available at www.doe.mass.edu/mcas/student/elacomp_scoreguide.html.

Reference Materials

At least one English-language dictionary per classroom was provided for student use during ELA Composition retest sessions. The use of bilingual word-to-word dictionaries was allowed for current and former limited English proficient students only. No other reference materials were allowed during either ELA Composition retest session.

Cross-Reference Information

Framework general standards 19–22 are assessed by the ELA Composition.

English Language Arts Retest

November Retest Writing Prompt

WRITING PROMPT

In many works of literature, a character rebels against a role that others expect him or her to play.

From a work of literature you have read in or out of school, select a character who rebels against a role others expect him or her to play. In a well-developed composition, identify the character, describe how the character rebels against others' expectations, and explain how the character's rebellion relates to the work as a whole.

B. Reading Comprehension

The English Language Arts Reading Comprehension retest was based on learning standards in the two content strands of the Massachusetts *English Language Arts Curriculum Framework* (2001) listed below. Page numbers for the learning standards appear in parentheses.

- Language (*Framework*, pages 19–26)
- Reading and Literature (*Framework*, pages 35–64)

The *English Language Arts Curriculum Framework* is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Reading Comprehension retest results are reported under two MCAS reporting categories: **Language** and **Reading and Literature**, which are identical to the two *Framework* content strands listed above.

Test Sessions

The ELA Reading Comprehension retest included three separate test sessions. Sessions 1 and 2 were both administered on the same day, and Session 3 was administered on the following day. Each session included selected readings, followed by multiple-choice and open-response questions. Reading passages and test items are shown on the following pages as they appeared in test booklets. Due to copyright restrictions, certain passages cannot be released to the public on the website. For further information, contact Student Assessment Services at 781-338-3625.

Reference Materials

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only, during all three ELA Reading Comprehension sessions. No other reference materials were allowed during any ELA Reading Comprehension retest session.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the *Framework* general standard it assesses. The correct answers for multiple-choice questions are also displayed in the table.

English Language Arts

READING COMPREHENSION: SESSION 1

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

*In this excerpt from his book *The Secret Life of Lobsters*, Trevor Corson describes the fascinating way that lobsters resolve conflicts with each other. Read the excerpt and answer the questions that follow.*

Claw Lock

from *The Secret Life of Lobsters* by Trevor Corson

- 1 *T*wo lobsters in a confined space will approach each other fearfully at first, and may leap backward when they come into initial contact. But their caution doesn't last.
- 2 The lobsters circle and slash at each other with their antennae. This fencing match emboldens them and they slice their claws through the water, from a widespread position to a crossed position and back out again. Next they press their claws together and shove each other back and forth, like a pair of prizefighters caught in a belligerent embrace. If one of the lobsters is larger than the other, and the smaller one can find no escape and no place to hide, the contest often ends with an abject display of groveling by the weaker animal. But if the two lobsters are evenly matched, then the shoving settles nothing. The fight escalates to a new level of tension and danger: claw lock.
- 3 Lobsters begin life ambidextrous, their two claws identical in shape and size. During their first year or two they start to favor either the right or left claw for crushing and the other for seizing and cutting, thus becoming either right- or left-“handed.” The lobster’s body also develops two basic types of muscle — fast fibers, which produce rapid contractions but tire quickly, and slow fibers, which produce gradual contractions of greater strength and longer duration. The lobster’s tail, for example, contains fast fibers, useful during the escape reflex of swimming in backward bursts. The walking legs, which are used to jog at average speeds for long periods, develop slow fibers. Similarly, the seizer claw fills with fast muscle and remains streamlined while the crusher claw fills with slow muscle and becomes bulky, like a bodybuilder’s bicep.
- 4 To test each other’s brawn and slow-muscle stamina, the dueling lobsters desist from their shoving match and grip each other’s crusher claws. If the lobsters are both right-handed, they reach across to grip each other as though shaking hands. If one of them is right-handed and the other left-handed, instead of reaching across they hold hands on the same side. And then they squeeze.
- 5 By entering claw lock the lobsters have traded their showy bout of shoving for a calmer but more consequential contest. It is a battle of endurance and a game of chicken — each of the lobster’s shells straining under the pressure but neither combatant willing to ease up. After fifteen to twenty seconds, one of the lobsters will usually attempt to retreat before its shell shatters, and the winner releases its grip.

- 6 The lobster's repertoire of escalation helps avoid unnecessary injury. Most fights in the wild are settled without actual violence and end when one of the lobsters runs away. However, if both lobsters are similar in size and equally aggressive, even claw lock may be insufficient to settle the contest. If the fight escalates further, the claws become terrible weapons of destruction. One or both of the animals is bound to lose an antenna, leg, claw, or eye.
- 7 If one lobster gets a grip on an appendage of the other, the trapped lobster may jettison its compromised claw or leg by means of a special muscle at the base of the appendage designed to slice off that lobster's own limb. This capability, called autotomy, serves as an escape mechanism. But autotomy, like amputation, is also a kind of field-hospital first aid. Lobsters have open circulatory systems, meaning that their blood flows through body cavities rather than inside veins. A leak in a lobster's shell, such as that caused by a crushed or punctured leg, can cause the animal to bleed to death unless it cuts off the limb and seals the joint. A blood leak is a liability for another reason. Generally lobsters are not cannibalistic, but the scent of an injured lobster's blood can inspire them to kill and consume their unlucky comrade.
- 8 With time, lobsters are able to regenerate most appendages, although the energy required to do so slows their overall growth. An eye, unfortunately, will never grow back. But other appendages may appear grotesquely in the eye's place — an unwanted foot, for instance.
- 9 If one of the lobsters capitulates before being destroyed, it may receive mercy. A generous victor will pursue the loser to ensure that it assumes a submissive posture by folding back its antennae, lowering its claws, and curling its tail, and backing into a corner. The winner will strut away, satisfied that it has achieved dominance. . . .

"Claw Lock," pages 128–130 from *THE SECRET LIFE OF LOBSTERS: HOW FISHERMEN AND SCIENTISTS ARE UNRAVELING THE MYSTERIES OF OUR FAVORITE CRUSTACEAN* by TREVOR CORSON. Copyright © 2004 by Trevor Corson. Reprinted by permission of HarperCollins Publishers.

- 1 What does the author describe in paragraphs 1 and 2?
- A. the steps that may lead to claw lock
 - B. the reasons some lobsters fight
 - C. the intelligence of lobsters
 - D. the dangers of claw lock
- 2 In paragraph 3, what is the **main** purpose of describing the difference between slow- and fast-fiber muscles?
- A. to provide a comparison between lobsters and bodybuilders
 - B. to provide additional information about how lobsters swim
 - C. to explain what role the muscles play in claw lock
 - D. to explain how lobsters fight and catch their prey
- 3 Based on paragraph 5, why is claw lock described as a “more consequential contest”?
- A. It can result in serious injury.
 - B. It can lead to a shoving match.
 - C. It can draw other lobsters into the fight.
 - D. It can result in a low lobster population.
- 4 According to paragraph 7, why would a lobster resort to autotomy?
- A. to avoid conflict
 - B. to save its own life
 - C. to kill its opponent
 - D. to grow a bigger claw

5 Based on the excerpt, which of the following is the most common outcome of claw lock?

- A. One of the lobsters will bleed to death.
- B. One of the lobsters will lose a limb.
- C. One of the lobsters will get help.
- D. One of the lobsters will give up.

6 Which of the following is the **best** context clue to understand the meaning of the word *regenerate* in paragraph 8?

- A. “appendages”
- B. “energy”
- C. “grow”
- D. “unwanted”

7 Read the sentence from paragraph 9 in the box below.

If one of the lobsters capitulates before being destroyed, it may receive mercy.

Which of the following is the **best** replacement for the word *capitulates*?

- A. surrenders
- B. struggles
- C. hides
- D. begs

Question 8 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 8 in the space provided in your Student Answer Booklet.

- 8** Based on the excerpt, describe the process of escalation that occurs in a conflict between two lobsters. Support your answer with relevant and specific information from the excerpt.

The following selection is an excerpt from the prologue of J.R.R. Tolkien's The Fellowship of the Ring. Read this excerpt to find out more about Hobbits. Answer the questions that follow.

PROLOGUE

I

Concerning Hobbits

by J.R.R. Tolkien

Students read an excerpt from the prologue of *The Fellowship of the Ring* and then answered questions 9 through 13 that follow on pages 14 and 15 of this document.

Due to copyright restrictions, the selection cannot be released to the public over the Internet. For more information, see the copyright citation below.

From THE FELLOWSHIP OF THE RING by J.R.R. Tolkien. Copyright © 1954, 1965, 1966 by J.R.R. Tolkien. 1954 edition copyright © renewed 1982 by Christopher R. Tolkien, Michael H.R. Tolkien, John F.R. Tolkien and Priscilla M.A.R. Tolkien. 1965/1966 edition copyright © renewed 1993, 1994 by Christopher R. Tolkien, John F.R. Tolkien and Priscilla M.A.R. Tolkien. Reprinted by permission of Houghton Mifflin Company. All rights reserved.

Due to copyright restrictions, the selection that appeared on this page cannot be released to the public over the Internet. For more information, see the citation on the previous page.

9 How can this selection **best** be described?

- A. autobiography
- B. imaginative fiction
- C. persuasive essay
- D. drama

10 According to the excerpt, how are Hobbits able to disappear so quickly?

- A. They know how to do magic tricks.
- B. The ability comes naturally to all inhabitants of Middle-earth.
- C. They learned the skill from Elves and Dwarves.
- D. The ability is inherited and develops with practice.

- 11 According to the excerpt, which of the following **best** explains why Hobbits “seldom wore shoes”?
- A. Shoes were uncomfortable for them to wear.
 - B. Shoes were unnecessary to protect their feet.
 - C. They lost their balance when wearing shoes.
 - D. They lacked the necessary skill to make shoes.

- 12 According to the excerpt, what trait makes Hobbits well suited for work as craftspeople?
- A. small size
 - B. bright eyes
 - C. nimble hands
 - D. even temper

- 13 Read the sentence from paragraph 4 in the box below.

Of old they spoke the languages of Men, after their own fashion, and liked and disliked much the same things as Men did.

- Which of the following is the **best** definition of the word *fashion* as it is used in the sentence?
- A. way of dressing
 - B. particular shape
 - C. personal manner
 - D. current trend

English Language Arts

READING COMPREHENSION: SESSION 2

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and two open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

For Douglas Spaulding, summer has special meaning. To learn what that meaning is, read the following excerpt from Dandelion Wine. Answer the questions that follow.

from **DANDELION
WINE**
by Ray Bradbury

Students read a selection titled *Dandelion Wine* and then answered questions 14 through 22 that follow on pages 18 and 19 of this document.

Due to copyright restrictions, the selection cannot be released to the public over the Internet. For more information, see the copyright citation below.

Reprinted by permission of Don Congdon Associates, Inc. © 1957, renewed 1985 by Ray Bradbury.

Due to copyright restrictions, the selection that appeared on this page cannot be released to the public over the Internet. For more information, see the citation on the previous page.

- 14 In paragraph 1, what mood does the personification of the setting create?
- A. a mood of boredom
 - B. a mood of calmness
 - C. a mood of awkwardness
 - D. a mood of frustration
- 15 What does the author's use of lists in paragraph 4 highlight?
- A. Douglas' fear of the unknown
 - B. Douglas' indecision about daily tasks
 - C. Douglas' excitement about the summer ahead
 - D. Douglas' love of the natural world
- 16 Based on the excerpt, what effect does staying in his grandparents' house once a week have on Douglas?
- A. It gives him time to think about a job.
 - B. It gives him reasons to want to grow up.
 - C. It gives him the chance to pretend he has magical control.
 - D. It gives him some doubts about his parents.
- 17 What is the "sorcerer's tower" referred to in paragraph 6?
- A. the cupola
 - B. the icehouse
 - C. the spiral stairs
 - D. the small house
- 18 What are the yellow squares referred to in paragraph 11?
- A. street lamps being turned on
 - B. Douglas' beacon eyes flashing
 - C. dawn breaking in the east
 - D. light reflecting from homes
- 19 What does the image "conducting an orchestra" in paragraph 20 tell the reader about Douglas?
- A. He feels like he is in charge of the day's beginning.
 - B. He enjoys presenting musical performances to the town.
 - C. He prefers to show his artistic talent in the early morning.
 - D. He knows that practice is essential to doing well.

- 20 In paragraph 20, why does Douglas point to the eastern sky?
- A. He is greeting people as they awake.
 - B. He is telling the sun to rise.
 - C. He wants to stop clouds from approaching.
 - D. He wants his friends to come out to play.

- 21 Read the sentence from paragraph 2 in the box below.

At night, when the trees washed together, he flashed his gaze like a beacon from this lighthouse in all directions over swarming seas of elm and oak and maple.

What is the meaning of *washed* as it is used in the sentence above?

- A. cleaned
- B. disappeared
- C. eroded
- D. blended

Question 22 is an open-response question.

- Read the question carefully.
- Explain your answer.
- Add supporting details.
- Double-check your work.

Write your answer to question 22 in the space provided in your Student Answer Booklet.

- 22 Character analysis usually includes analysis of a character's thoughts, actions, and motivation. Explain what this excerpt reveals about Douglas' character. Use relevant and specific information from the excerpt to support your answer.

In a society that eats more and more processed food, consumers can benefit from understanding the ingredients in the food they buy. The following article contains two sources of information, a Nutrition Facts label and a list of ingredients. Read the article and answer the questions that follow.

Be a Nutrition Detective

by Jeanne Miller

Granola Bars

Start Here →		Nutrition Facts	
		Serving Size 2 Bars (30 g) Servings Per Container 6	
		Amount Per Serving	
		Calories 130 Calories from Fat 30	
		% Daily Value*	
Limit These Nutrients	Total Fat	3.5g	6%
	Saturated Fat	0.5g	2%
	Polyunsaturated Fat	2g	
	Monounsaturated Fat	1g	
	Cholesterol	0mg	0%
	Sodium	120mg	5%
	Total Carbohydrate	22g	7%
	Dietary Fiber	1g	6%
	Sugars	8g	
	Protein	2g	
	Vitamin A	10%	• Vitamin C 10%
	Calcium	0%	• Iron 10%
Get Enough of These Nutrients	Vitamin E	10%	• Niacin 10%
	Vitamin B ₆	10%	• Vitamin B ₁₂ 10%
	*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories:	2,000	2,500
Footnote	Total Fat	Less than 65g	80g
	Sat Fat	Less than 20g	25g
	Cholesterol	Less than 300mg	300mg
	Sodium	Less than 2,400mg	2,400mg
	Total Carbohydrate	300g	375g
	Dietary Fiber	25g	30g

Quick Guide to % DV

5% or Less is Low

20% or More is High

INGREDIENTS: WHOLE GRAIN ROLLED OATS, SUGAR, CRISP RICE (RICE, SUGAR, SALT, CORN SYRUP, MALT SYRUP), CORN OIL WITH TBHQ (PRESERVATIVE), CORN SYRUP, SOY NUGGETS (SOY PROTEIN ISOLATE, RICE FLOUR, BARLEY MALT, SALT), CORN SYRUP SOLIDS, DRIED CRANBERRIES, MOLASSES, NATURAL AND ARTIFICIAL FLAVORS (CONTAINS MILK INGREDIENT), GLYCERINE, SALT, SOY LECITHIN, HONEY, DEXTROSE, HIGH FRUCTOSE CORN SYRUP, CINNAMON, DRIED BLUEBERRIES, DRIED CHERRIES, DRIED STRAWBERRIES, DRIED RASPBERRIES, SODIUM BICARBONATE, ASCORBIC ACID, SUNFLOWER OIL, VITAMIN E ACETATE, FERROUS FUMARATE, VITAMIN A PALMITATE, NIACINAMIDE*, ALMONDS, PYRIDOXINE HYDROCHLORIDE*, CYANOCOBALAMIN*.

*ONE OF THE B VITAMINS

CONTAINS SOY, MILK AND ALMOND INGREDIENTS.

MAY CONTAIN TRACES OF PEANUT AND OTHER TREE NUTS.

- The best way to make sure that the food you put into your mouth has no hidden—and unhealthy—surprises is to read the ingredient list and the Nutrition Facts label, printed on almost all packaged food. The ingredients are listed in order of quantity, with the most plentiful being first. The Nutrition Facts label includes the number of calories and the amount of fat, carbohydrate, and protein per serving of the product. Here you'll also find out how much of the fat is saturated and how much of the carbohydrate is in the form of sugars (including naturally occurring sugars like those in fruit and milk). Beginning in 2006, the label will also state the amount of trans-fat. Be careful to make sure that the serving size listed matches the amount you actually eat.
- A good procedure for identifying the substances you want to eat regularly or in moderation is to:
- Search the ingredient list for evidence of trans-fat (which is in hydrogenated fats).¹ Forty percent of the average supermarket's food products contain trans-fat. You'll find it in microwave popcorn, cookies, cakes, doughnuts, fried snacks, whipped toppings, and dozens of other products—even in

¹ *hydrogenated fats* — unsaturated oils that have been combined with hydrogen to solidify them

frozen foods like potpies, fish sticks, and French fries. If the ingredient list includes “shortening” or “hydrogenated” or “partially hydrogenated” oil, the product has trans-fat and you should avoid it. The safe level for trans-fat in your diet has not been determined.

- 4 • Next, search the ingredient list for added sugars. A seemingly healthy beverage like “fruit juice drink” or “fruit punch” can have as little as 10 percent actual fruit juice and may have high-fructose corn syrup as its first or second ingredient. A one-cup serving could easily have the equivalent of six teaspoons of sugar in it. Commonly added sugars include white and brown sugar, honey, molasses, corn syrup, maple syrup, and dried or crystallized cane juice. Keep your consumption of these added sugars as low as possible, since they are digested quickly and can cause abrupt changes in blood-sugar level. They also add calories to your diet without adding nutrients.
- 5 • Look for whole grains in the ingredient list. Whole-grain products should list whole wheat, whole oats, whole rye, or other whole grains in their contents. If the label says “wheat flour,” the manufacturer may just be trying to trick you into thinking it’s whole wheat. If it says “enriched” flour or “unbleached” flour, you can be sure that it’s made from highly refined grains.² The more often you eat whole grains, the better.
- 6 • Find out how much saturated fat is in the product. For this, you need to check the Nutrition Facts label. Keep the amount of saturated fat you consume as low as possible, but even healthy sources of unsaturated fats, such as peanut oil and salmon, usually have a little saturated fat in them, too. Just make sure that, if it’s listed, the unsaturated fat is greater than the saturated fat.
- 7 Now you’re ready to do a little sleuthing around the supermarket or kitchen or school cafeteria to make the healthiest food choices possible.

² *refined grains* — grains with the nutritious outer layer (bran) removed

“Be a Nutrition Detective” by Jeanne Miller from *ODYSSEY*’s May 2004 issue: *Weighing In*, copyright © 2004 by Carus Publishing Company, published by Cobblestone Publishing, 30 Grove Street, Suite C, Peterborough, NH 03458. All rights reserved. Used by permission of the publisher.

- 23 In paragraph 1, to what is the author referring when she writes of “hidden—and unhealthy—surprises” in food?
- A. exotic spices that add unusual flavor
 - B. ingredients that lack nutritional value
 - C. unusual textures that are baked inside
 - D. ingredients that are unintentionally present
- 24 According to paragraph 1, which of the following facts about the product can be learned from the Nutrition Facts label?
- A. when it was packaged
 - B. how long it should be cooked
 - C. how much fat is in one serving
 - D. where the ingredients were produced
- 25 Refer to the list of ingredients for granola bars. Which listed ingredient meets the nutritional recommendation identified in paragraph 5 of the article?
- A. almonds
 - B. rice flour
 - C. soy protein isolate
 - D. whole grain rolled oats
- 26 What is the main purpose of the article?
- A. to explain why certain fats damage the body
 - B. to compare beneficial and harmful sugars in food
 - C. to show health choices that can be made using food labels
 - D. to illustrate how manufacturers avoid disclosing ingredients

Question 27 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 27 in the space provided in your Student Answer Booklet.

- 27** According to the article, why is it important for a consumer to study both the Nutrition Facts label and the list of ingredients? Support your answer with relevant and specific information from the article.

English Language Arts

READING COMPREHENSION: SESSION 3

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

In the following essay, author Kurt Vonnegut presents his unique perspective on the craft of writing. Read his essay and answer the questions that follow.

How to Write with Style

by Kurt Vonnegut

- 1 NEWSPAPER REPORTERS AND TECHNICAL WRITERS ARE TRAINED to reveal almost nothing about themselves in their writings. This makes them freaks in the world of writers, since almost all of the other ink-stained wretches in that world reveal a lot about themselves to readers. We call these revelations, accidental and intentional, elements of style.
- 2 These revelations tell us as readers what sort of person it is with whom we are spending time. Does the writer sound ignorant or informed, stupid or bright, crooked or honest, humorless or playful—? And on and on.
- 3 Why should you examine your writing style with the idea of improving it? Do so as a mark of respect for your readers, whatever you're writing. If you scribble your thoughts any which way, your readers will surely feel that you care nothing about them. They will mark you down as an egomaniac¹ or a chowderhead—or worse, they will stop reading you.
- 4 The most damning revelation you can make about yourself is that you do not know what is interesting and what is not. Don't you yourself like or dislike writers mainly for what they choose to show you or make you think about? Did you ever admire an empty-headed writer for his or her mastery of the language? No.
- 5 So your own winning style must begin with ideas in your head.

1. Find a Subject You Care About

- 6 Find a subject you care about and which you in your heart feel others should care about. It is this genuine caring, and not your games with language, which will be the most compelling and seductive² element in your style.
- 7 I am not urging you to write a novel, by the way—although I would not be sorry if you wrote one, provided you genuinely cared about something. A petition to the mayor about a pothole in front of your house or a love letter to the girl next door will do.

2. Do Not Ramble, Though

- 8 I won't ramble on about that.

¹ *egomaniac* — a person who is extremely self-centered or selfish

² *seductive* — having attractive or tempting qualities

3. Keep It Simple

- 9 As for your use of language: Remember that two great masters of language, William Shakespeare and James Joyce, wrote sentences which were almost childlike when their subjects were most profound. “To be or not to be?” asks Shakespeare’s Hamlet. The longest word is three letters long. Joyce, when he was frisky, could put together a sentence as intricate and as glittering as a necklace for Cleopatra, but my favorite sentence in his short story “Eveline” is this one: “She was tired.” At that point in the story, no other words could break the heart of a reader as those three words do.
- 10 Simplicity of language is not only reputable, but perhaps even sacred. The Bible opens with a sentence well within the writing skills of a lively fourteen-year-old: “In the beginning God created the heaven and the earth.”

4. Have the Guts to Cut

- 11 It may be that you, too, are capable of making necklaces for Cleopatra, so to speak. But your eloquence³ should be the servant of the ideas in your head. Your rule might be this: If a sentence, no matter how excellent, does not illuminate your subject in some new and useful way, scratch it out.

5. Sound Like Yourself

- 12 The writing style which is most natural for you is bound to echo the speech you heard when a child. English was the novelist Joseph Conrad’s third language, and much that seems piquant⁴ in his use of English was no doubt colored by his first language, which was Polish. And lucky indeed is the writer who has grown up in Ireland, for the English spoken there is so amusing and musical. I myself grew up in Indianapolis, where common speech sounds like a band saw cutting galvanized tin, and employs a vocabulary as unornamental as a monkey wrench.
- 13 In some of the more remote hollows of Appalachia, children still grow up hearing songs and locutions⁵ of Elizabethan times. Yes, and many Americans grow up hearing a language other than English, or an English dialect a majority of Americans cannot understand.
- 14 All these varieties of speech are beautiful, just as the varieties of butterflies are beautiful. No matter what your first language, you should treasure it all your life. If it happens not to be standard English, and if it shows itself when you write standard English, the result is usually delightful, like a very pretty girl with one eye that is green and one that is blue.
- 15 I myself find that I trust my own writing most, and others seem to trust it most, too, when I sound most like a person from Indianapolis, which is what I am. What alternatives do I have? The one most vehemently⁶ recommended by teachers has no doubt been pressed on you, as well: to write like cultivated Englishmen of a century or more ago.

³ *eloquence* — the quality of forceful or persuasive expression

⁴ *piquant* — agreeably stimulating

⁵ *locutions* — words or expressions characteristic of a region or group

⁶ *vehemently* — with great force or strong emotion

6. Say What You Mean to Say

- 16 I used to be exasperated by such teachers, but I am no more. I understand now that all those antique essays and stories with which I was to compare my own work were not magnificent for their datedness or foreignness, but for saying precisely what their authors meant them to say. My teachers wished me to write accurately, always selecting the most effective words, and relating the words to one another unambiguously, rigidly, like parts of a machine. The teachers did not want to turn me into an Englishman after all. They hoped that I would become understandable—and therefore understood. And there went my dream of doing with words what Pablo Picasso⁷ did with paint or what any number of jazz⁸ idols did with music. If I broke all the rules of punctuation, had words mean whatever I wanted them to mean, and strung them together higgledy-piggledy, I would simply not be understood. So you, too, had better avoid Picasso-style or jazz-style writing, if you have something worth saying and wish to be understood.
- 17 Readers want our pages to look very much like pages they have seen before. Why? This is because they themselves have a tough job to do, and they need all the help they can get from us.

7. Pity the Readers

- 18 They have to identify thousands of little marks on paper, and make sense of them immediately. They have to *read*, an art so difficult that most people don't really master it even after having studied it all through grade school and high school—twelve long years.
- 19 So this discussion must finally acknowledge that our stylistic options as writers are neither numerous nor glamorous, since our readers are bound to be such imperfect artists. Our audience requires us to be sympathetic and patient teachers, even willing to simplify and clarify—whereas we would rather soar high above the crowd, singing like nightingales.
- 20 That is the bad news. The good news is that we Americans are governed under a unique Constitution, which allows us to write whatever we please without fear of punishment. So the most meaningful aspect of our styles, which is what we choose to write about, is utterly unlimited.

8. For Really Detailed Advice

- 21 For a discussion of literary style in a narrower sense, in a more technical sense, I commend to your attention *The Elements of Style*, by William Strunk Jr., and E. B. White (Macmillan, 1979). E. B. White is, of course, one of the most admirable literary stylists this country has so far produced.
- 22 You should realize, too, that no one would care how well or badly Mr. White expressed himself, if he did not have perfectly enchanting things to say.

⁷ *Pablo Picasso* — twentieth-century Spanish artist famous for his innovative styles and defiance of convention

⁸ *jazz* — a musical form marked by improvisation and departure from established traditions

- 28 According to the essay, what does Vonnegut consider the **most** important attribute for a writer?
- A. passionate interest in a topic
 - B. knowledge of a second language
 - C. thorough mastery of mechanical rules
 - D. command of an extensive vocabulary

- 29 According to paragraph 1, Vonnegut believes that the writing of newspaper reporters and technical writers is
- A. more precise than that of other writers.
 - B. more impressive than that of other writers.
 - C. more impersonal than that of other writers.
 - D. more understandable than that of other writers.

- 30 What is the **main** purpose of paragraphs 12–15 of the essay?
- A. to explain why Joseph Conrad’s use of language differs so much from that of other English writers
 - B. to provide information about the persistence of older forms of English in isolated geographic areas
 - C. to explain how writers can use their own language backgrounds to enrich their writing
 - D. to provide information about the distinctive features of various regional dialects

- 31 What is Vonnegut’s **main** point in paragraph 17?
- A. Readers are often suspicious of new ideas.
 - B. Readers prefer a writer’s style to be clear and familiar.
 - C. Readers are disappointed when a writer’s style changes.
 - D. Readers generally prefer old-fashioned essays and stories.

- 32 Read the sentence from paragraph 20 in the box below.

The good news is that we Americans are governed under a unique Constitution, which allows us to write whatever we please without fear of punishment.

In the sentence, what is the “good news” to which Vonnegut refers?

- A. Americans are guaranteed an audience no matter how they write.
- B. Americans have the right to express their thoughts about any topic.
- C. Americans are unconcerned about the accuracy of what they write.
- D. Americans have the right to decide the meanings of the words they use.

- 33 Which of the following sentences **best** indicates that the essay is instructional?
- A. “If a sentence, no matter how excellent, does not illuminate your subject in some new and useful way, scratch it out.”
 - B. “All these varieties of speech are beautiful, just as the varieties of butterflies are beautiful.”
 - C. “The teachers did not want to turn me into an Englishman after all.”
 - D. “They have to identify thousands of little marks on paper, and make sense of them immediately.”
- 34 What does the expression *higgledy-piggledy* **most likely** mean as it is used in paragraph 16?
- A. in a rigid way
 - B. in a random way
 - C. in a repetitious way
 - D. in a recognizable way

Question 35 is an open-response question.

- Read the question carefully.
- Explain your answer.
- Add supporting details.
- Double-check your work.

Write your answer to question 35 in the space provided in your Student Answer Booklet.

- 35 Throughout the essay, how does Vonnegut demonstrate that he is following his own advice to writers? Support your answer with relevant and specific details from the essay.

In this chapter from Mythology, Edith Hamilton retells the myth about two mortals, Baucis and Philemon, who welcome two gods into their home. Read the myth and answer the questions that follow.

BAUCIS AND PHILEMON

from *Mythology* by Edith Hamilton

- 1 In the Phrygian hill-country there were once two trees which all the peasants near and far pointed out as a great marvel, and no wonder, for one was an oak and the other a linden, yet they grew from a single trunk. The story of how this came about is a proof of the immeasurable power of the gods, and also of the way they reward the humble and the pious.
- 2 Sometimes when Jupiter was tired of eating ambrosia and drinking nectar up in Olympus and even a little weary of listening to Apollo's lyre and watching the Graces dance, he would come down to the earth, disguise himself as a mortal and go looking for adventures. His favorite companion on these tours was Mercury, the most entertaining of all the gods, the shrewdest and the most resourceful. On this particular trip Jupiter had determined to find out how hospitable the people of Phrygia were. Hospitality was, of course, very important to him, since all guests, all who seek shelter in a strange land, were under his especial protection.
- 3 The two gods, accordingly, took on the appearance of poor wayfarers and wandered through the land, knocking at each lowly hut or great house they came to and asking for food and a place to rest in. Not one would admit them; every time they were dismissed insolently and the door barred against them. They made trial of hundreds; all treated them in the same way. At last they came upon a little hovel of the humblest sort, poorer than any they had yet found, with a roof made only of reeds. But here, when they knocked, the door was opened wide and a cheerful voice bade them enter. They had to stoop to pass through the low entrance, but once inside they found themselves in a snug and very clean room, where a kindly-faced old man and woman welcomed them in the friendliest fashion and bustled about to make them comfortable.
- 4 The old man set a bench near the fire and told them to stretch out on it and rest their tired limbs, and the old woman threw a soft covering over it. Her name was Baucis, she told the strangers, and her husband was called Philemon. They had lived in that cottage all their married life and had always been happy. "We are poor folk," she said, "but poverty isn't so bad when you're willing to own up to it, and a contented spirit is a great help, too." All the while she was talking, she was busy doing things for them. The coals under the ashes on the dark hearth she fanned to life until a cheerful fire was burning. Over this she hung a little kettle full of water and just as it began to boil her husband came in with a fine cabbage he had got from the garden. Into the kettle it went, with a piece of the pork which was hanging from one of the beams. While this cooked Baucis set the table with her trembling old hands. One table-leg was too short, but she propped it up with a bit of broken dish. On the board she placed olives and radishes and several eggs which she had roasted in the ashes. By this time the cabbage and bacon were done, and the old man pushed two rickety couches up to the table and bade his guests recline and eat.
- 5 Presently he brought them cups of beechwood and an earthenware mixing bowl which held some wine very like vinegar, plentifully diluted with water. Philemon, however, was clearly proud and happy at being able to add such cheer to the supper and he kept on the watch to refill each cup as soon

as it was emptied. The two old folks were so pleased and excited by the success of their hospitality that only very slowly a strange thing dawned upon them. The mixing bowl kept full. No matter how many cups were poured out from it, the level of the wine stayed the same, up to the brim. As they saw this wonder each looked in terror at the other, and dropping their eyes they prayed silently. Then in quavering voices and trembling all over they begged their guests to pardon the poor refreshments they had offered. “We have a goose,” the old man said, “which we ought to have given your lordships. But if you will only wait, it shall be done at once.” To catch the goose, however, proved beyond their powers. They tried in vain until they were worn out, while Jupiter and Mercury watched them greatly entertained.

6 But when both Philemon and Baucis had had to give up the chase panting and exhausted, the gods felt that the time had come for them to take action. They were really very kind. “You have been hosts to gods,” they said, “and you shall have your reward. This wicked country which despises the poor stranger will be bitterly punished, but not you.” They then escorted the two out of the hut and told them to look around them. To their amazement all they saw was water. The whole countryside had disappeared. A great lake surrounded them. Their neighbors had not been good to the old couple; nevertheless standing there they wept for them. But of a sudden their tears were dried by an overwhelming wonder. Before their eyes the tiny, lowly hut which had been their home for so long was turned into a stately pillared temple of whitest marble with a golden roof.

7 “Good people,” Jupiter said, “ask whatever you want and you shall have your wish.” The old people exchanged a hurried whisper, then Philemon spoke. “Let us be your priests, guarding this temple for you — and oh, since we have lived so long together, let neither of us ever have to live alone. Grant that we may die together.”

8 The gods assented, well pleased with the two. A long time they served in that grand building, and the story does not say whether they ever missed their little cozy room with its cheerful hearth. But one day standing before the marble and golden magnificence they fell to talking about that former life, which had been so hard and yet so happy. By now both were in extreme old age. Suddenly as they exchanged memories each saw the other putting forth leaves. Then bark was growing around them. They had time only to cry, “Farewell, dear companion.” As the words passed their lips they became trees, but still they were together. The linden and the oak grew from one trunk.

9 From far and wide people came to admire the wonder, and always wreaths of flowers hung on the branches in honor of the pious and faithful pair.

From MYTHOLOGY by Edith Hamilton. Copyright © 1942 by Edith Hamilton; Copyright © renewed 1969 by Dorian Fielding Reid and Doris Fielding Reid. By permission of LITTLE BROWN & COMPANY.

36 Which of the following **mainly** sustains Baucis and Philemon in the myth?

- A. their dislike for their neighbors
- B. their love for each other
- C. their hope for a reward
- D. their faith in the gods

37 Read the details from paragraphs 4 and 5 in the box below.

- the simple meal
- the rickety couches and table
- the diluted wine

What is the **main** purpose of the details?

- A. to show that the couple has plain tastes
- B. to show that the gods will be disappointed
- C. to show the extent of the couple's poverty
- D. to show the typical household of the time

38 Which event from paragraph 6 is the **best** example of Baucis and Philemon's main character trait?

- A. They fail to capture the goose.
- B. They are amazed by the water.
- C. They weep for their neighbors.
- D. They are awed by the temple.

39 Which of the following **best** describes the lesson of the myth?

- A. The gods are unpredictable.
- B. It is unwise to trust strangers.
- C. A generous spirit will be rewarded.
- D. Mischief often leads to misunderstanding.

40 *Hospitality*, in paragraph 2, stems from the Latin word *hospes*, meaning "host." Why are Baucis and Philemon considered hospitable?

- A. They are relatively poor.
- B. They ask to guard the temple.
- C. They care for each other very much.
- D. They welcome the gods into their home.

**English Language Arts
Reading Comprehension Retest
November 2008 Released Items:
Reporting Categories, Standards, and Correct Answers***

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC)*
1	10	<i>Reading and Literature</i>	13	A
2	10	<i>Reading and Literature</i>	13	C
3	10	<i>Reading and Literature</i>	13	A
4	10	<i>Reading and Literature</i>	8	B
5	11	<i>Reading and Literature</i>	13	D
6	11	<i>Language</i>	4	C
7	11	<i>Language</i>	4	A
8	12	<i>Reading and Literature</i>	13	
9	14	<i>Reading and Literature</i>	10	B
10	14	<i>Reading and Literature</i>	12	D
11	15	<i>Reading and Literature</i>	12	B
12	15	<i>Reading and Literature</i>	8	C
13	15	<i>Language</i>	4	C
14	18	<i>Reading and Literature</i>	15	B
15	18	<i>Reading and Literature</i>	12	C
16	18	<i>Reading and Literature</i>	12	C
17	18	<i>Reading and Literature</i>	8	A
18	18	<i>Reading and Literature</i>	15	D
19	18	<i>Reading and Literature</i>	12	A
20	19	<i>Reading and Literature</i>	8	B
21	19	<i>Language</i>	4	D
22	19	<i>Reading and Literature</i>	12	
23	22	<i>Reading and Literature</i>	13	B
24	22	<i>Reading and Literature</i>	8	C
25	22	<i>Reading and Literature</i>	13	D
26	22	<i>Reading and Literature</i>	13	C
27	23	<i>Reading and Literature</i>	13	
28	27	<i>Reading and Literature</i>	8	A
29	27	<i>Reading and Literature</i>	13	C
30	27	<i>Reading and Literature</i>	13	C
31	27	<i>Reading and Literature</i>	13	B
32	27	<i>Reading and Literature</i>	13	B
33	28	<i>Reading and Literature</i>	15	A
34	28	<i>Language</i>	4	B
35	28	<i>Reading and Literature</i>	15	
36	31	<i>Reading and Literature</i>	16	B
37	31	<i>Reading and Literature</i>	16	C
38	31	<i>Reading and Literature</i>	16	C
39	31	<i>Reading and Literature</i>	16	C
40	31	<i>Language</i>	4	D

*Answers are provided here for multiple-choice items only.

III. Mathematics Retest

Mathematics Retest

The Mathematics retest was based on learning standards in the *Massachusetts Mathematics Curriculum Framework* (2000). The *Framework* identifies five major content strands, listed below.

- Number Sense and Operations
- Patterns, Relations, and Algebra
- Geometry
- Measurement
- Data Analysis, Statistics, and Probability

The grades 9–10 learning standards for these strands appear on pages 72–75 of the *Mathematics Curriculum Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, Mathematics retest results are reported under five MCAS reporting categories, which are identical to the five *Mathematics Curriculum Framework* content strands listed above.

Test Sessions

The Mathematics retest included two separate test sessions, which were administered on consecutive days. Each session included multiple-choice and open-response items. Session 1 also included short-answer questions.

Reference Materials and Tools

Each student taking the Mathematics retest was provided with a Grade 10 Mathematics Reference Sheet and was allowed to refer to it at any time during testing. A copy of the reference sheet follows the final question in this chapter.

During session 2, each student had sole access to a calculator with at least four functions and a square root key. Calculator use was not allowed during session 1.

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only during both Mathematics retest sessions. No other reference tools or materials were allowed.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item’s reporting category and the *Framework* learning standard it assesses. The correct answers for multiple-choice and short-answer items are also displayed in the table.

Mathematics

SESSION 1

You may use your reference sheet during this session.

You may **not** use a calculator during this session.



DIRECTIONS

This session contains fourteen multiple-choice questions, four short-answer questions, and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

- 1 What is the value of the expression below?

$$4(2^5 - 3^3)$$

- A. 20
- B. 4
- C. -4
- D. -20

- 2 What value of x makes the equation below true?

$$2^x = 8$$

- A. 2
- B. 3
- C. 4
- D. 6

- 3 The number of students in each homeroom class in Jim's school is shown in the stem-and-leaf plot below.

Number of Students in Each Homeroom Class

1	7 8 8 9 9
2	0 2 3 4 5 8 8 8
3	2 3 4 7

Key

3 | 2 represents 32

What is the median number of students per homeroom class?

- A. 20
- B. 24
- C. 25
- D. 28

- 4 The table below shows a quadratic relationship between the values of x and y .

x	y
1	2
2	5
3	10
4	17

Based on the relationship in the table, what is the value of y when $x = 6$?

- A. 25
 - B. 26
 - C. 31
 - D. 37
- 5 What is the value of the expression below?

$$\sqrt{6^2 + 8^2}$$

- A. 10
- B. 14
- C. 28
- D. 50

- 6 Six employees work part-time at a clothing store. The number of hours that each employee worked last week is listed below.

5, 16, 8, 10, 8, 19

Each employee earned \$10 per hour. What was the mean total amount earned per employee last week?

- A. \$80
- B. \$90
- C. \$110
- D. \$140

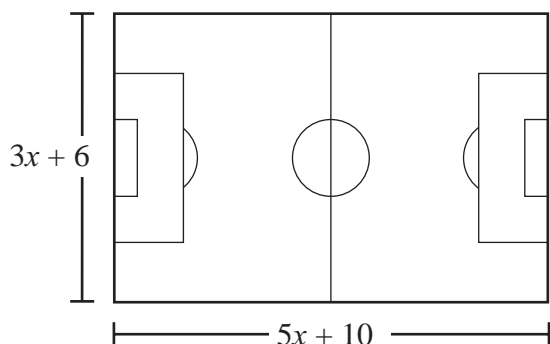
- 7 A three-dimensional solid is projected onto a plane. The projection is shown below.



Which of the following could **not** be the three-dimensional solid?

- A. a cone
- B. a prism
- C. a sphere
- D. a cylinder

- 8 A rectangular soccer field and expressions representing its dimensions, in yards, are shown in the diagram below.



Which of the following expressions represents the perimeter, in yards, of the soccer field?

- A. $48x$
- B. $48x^4$
- C. $16x + 32$
- D. $16x^4 + 32$

- 9 Which of the following is closest to the value of $\sqrt{39}$?

- A. 5.7
- B. 6.2
- C. 6.7
- D. 7.1

- 10 Which of the following **always** has line symmetry?

- A. a triangle
- B. a rectangle
- C. a trapezoid
- D. a parallelogram

- 11 Cindy wrote a number pattern using the rule below.

- The first number in the pattern is 3.
- To find the next number in the pattern, add 1 to the previous number and then double the sum.

What is the fourth number in the pattern?

- A. 13
- B. 18
- C. 31
- D. 38

- 12 Village Motors had total sales of \$86,571,394 last year. Of this amount, used-car sales were \$28,066,519.

Carlos correctly determined the percent of total sales that were used-car sales. Which of the following estimates is closest to the percent that he determined?

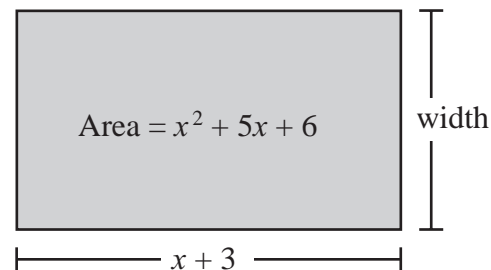
- A. 10%
- B. 25%
- C. 33%
- D. 50%

- 13 Maggie correctly measured the distance across a playing field to the nearest meter and recorded that distance. The distance she recorded was 55 meters.

Which of the following could **not** be the actual distance across the playing field?

- A. 55.7 meters
- B. 55.0 meters
- C. 54.9 meters
- D. 54.6 meters

- 14 A diagram of Lynne's rectangular yard is shown below.



Expressions representing the area and length of Lynne's yard are as follows:

Area of yard: $x^2 + 5x + 6$

Length of yard: $x + 3$

Which of the following expressions represents the width of Lynne's yard?

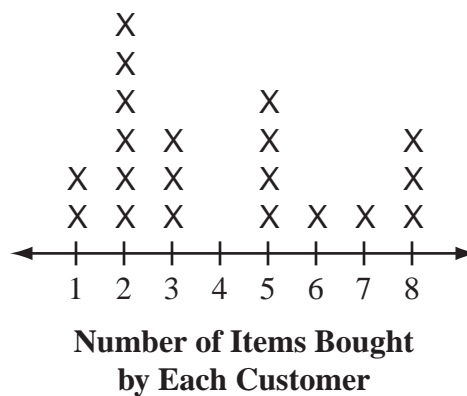
- A. $x + 1$
- B. $x + 2$
- C. $x + 3$
- D. $x + 6$

Questions 15 and 16 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 15 What is the value of the expression below?

$$3 \cdot 5^2$$

- 16 Benito recorded the number of items bought by each of the first 20 customers of an online bookstore one day. The results are shown in the line plot below.



Based on Benito's line plot, what was the median number of items bought per customer?

Question 17 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 17 in the space provided in your Student Answer Booklet.

- 17** Wind speed affects how fast an airplane travels. An airplane's speed can be found using one of the equations below, depending on whether the airplane is flying with or against the wind.

$$d = p + w$$

$$u = p - w$$

The variables in the equations are defined as follows:

- d = the speed of the airplane flying **with** the wind, in miles per hour
- u = the speed of the airplane flying **against** the wind, in miles per hour
- p = the speed of the airplane if there were no wind, in miles per hour
- w = the speed of the wind, in miles per hour

- a. If $p = 550$ miles per hour and $w = 20$ miles per hour, determine the following values:

- the value of d
- the value of u

Show your work for each of your answers.

- b. If $u = 480$ miles per hour and $w = 40$ miles per hour, determine the following values:

- the value of p
- the value of d

Show your work for each of your answers.

- c. If $d = 210$ miles per hour and $u = 150$ miles per hour, determine the following values:

- the value of p
- the value of w

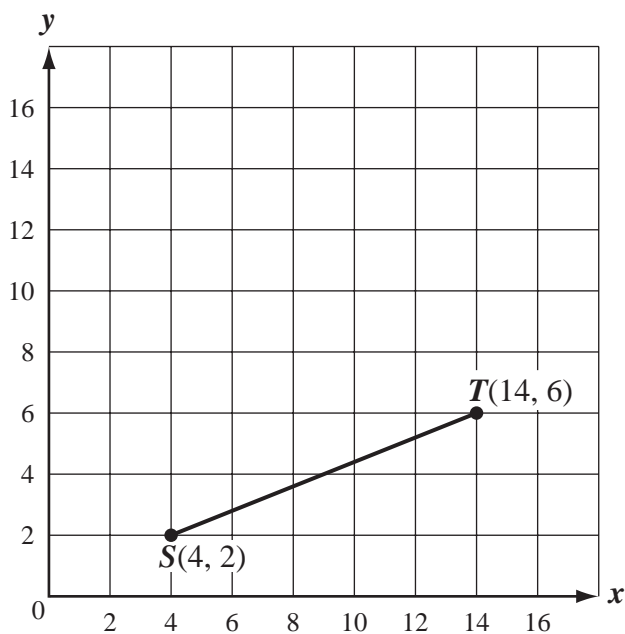
Show your work for each of your answers.

Questions 18 and 19 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 18 What is one value of x that makes the quadratic equation below true?

$$x^2 + x - 6 = 0$$

- 19 On the coordinate grid below, \overline{ST} is shown.



Write the ordered pair that represents the midpoint of \overline{ST} .

Questions 20 and 21 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 20 in the space provided in your Student Answer Booklet.

- 20** The workers at a company received a bonus this year. The table below shows the numbers of years some of the workers have been employed at the company and the bonus each worker received.

**Years Employed
and Bonuses Received**

Worker's Name	Number of Years Employed	Bonus
Martinez	2	\$250
Leung	4	\$500
Sagafi	1	\$100
Chandler	3	\$200
Parker	6	\$600
Vittel	5	\$450

- What is the range of the bonuses in the table? Show or explain how you got your answer.
- On the grid in your Student Answer Booklet, make a scatterplot of the data in the table by plotting points with coordinates (x, y) , where x and y are defined as follows:
 - x = number of years a worker has been employed
 - y = bonus (\$) received by that worker

Be sure to label the x -axis and y -axis, indicate the scale on each axis, and provide a title for your scatterplot.

- On the grid, draw a line that approximates the line of best fit (trend line) for your scatterplot.
- Use your trend line from part (c) to predict the bonus that a worker who has been employed at the company for 10 years should expect to receive. Show or explain how you got your answer.

Write your answer to question 21 in the space provided in your Student Answer Booklet.

- 21 Let the operation \diamond be defined for all real numbers s and t as follows:

$$s \diamond t = s + t - 2$$

For example, $4 \diamond 8 = 4 + 8 - 2 = 10$.

- What is the value of $3 \diamond 5$? Show your work.
- What is the value of $7 \diamond (-11)$? Show your work.
- What is the value of y that makes the equation below true?

$$6 \diamond y = 6$$

Show or explain how you got your answer.

- Use the properties of operations on real numbers to show that $x \diamond y = y \diamond x$ for all real numbers x and y .

Mathematics

SESSION 2

*You may use your reference sheet during this session.
You may use a calculator during this session.*



DIRECTIONS

This session contains eighteen multiple-choice questions and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

- 22** Which of the following equations demonstrates the distributive property?

A. $3x + 0 = 3x$
B. $3(xy) = (3x)y$
C. $3 + x = x + 3$
D. $3(x + y) = 3x + 3y$

- 23** Each edge of a cube is 3 inches long. What is the surface area of the cube?

A. 54 square inches
B. 36 square inches
C. 27 square inches
D. 18 square inches

- 24** The table below shows the number of points that a football team scored in 9 games this season.

Points Scored Per Game

Game	Number of Points
1	21
2	7
3	31
4	14
5	10
6	3
7	12
8	21
9	17

What is the median number of points the team scored per game?

A. 14 points
B. 15 points
C. 21 points
D. 28 points

- 25 Hamid made a model of the solar system. In the model, a circle with a diameter of 6 centimeters represents the orbit of Mercury.

What is the circumference of the circle?

- A. 12π centimeters
- B. 9π centimeters
- C. 6π centimeters
- D. 3π centimeters

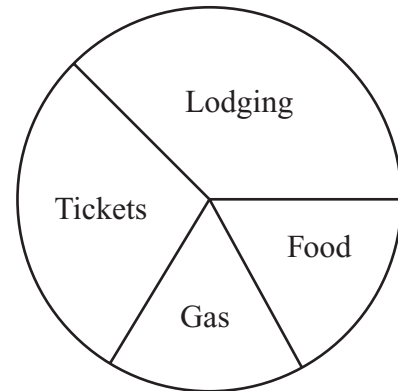
- 26 What is the slope of the line represented by the equation below?

$$y - 5 = 3x + 10$$

- A. 3
- B. 5
- C. 10
- D. 15

- 27 The circle graph below represents Wendell's vacation expenses.

Wendell's Vacation Expenses



Wendell spent a total of \$800 for his vacation. Which of the following is closest to the amount that Wendell spent for lodging?

- A. \$500
- B. \$400
- C. \$300
- D. \$200

- 28 The table below shows the commissions that Roland earns selling computer equipment.

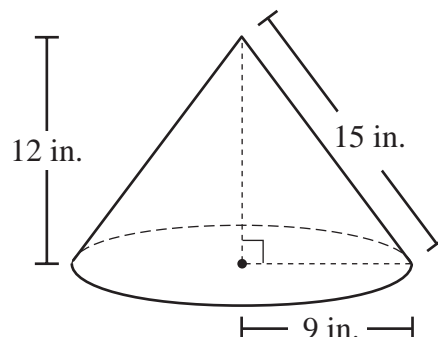
Roland's Commissions

Value of Computer Equipment Sold (\$)	Roland's Commission (\$)
500	25
1000	50
1200	60
2500	?
3200	160

Roland's commission varies directly with the value of computer equipment sold. What commission does he earn from selling computer equipment that has a value of \$2500?

- A. \$80
- B. \$100
- C. \$110
- D. \$125

- 29 A cap in the shape of a right circular cone is built on top of a chimney. A diagram representing the cap is shown below.



Based on the dimensions in the diagram, which of the following is closest to the lateral surface area of the cap?

- A. 212 sq. in.
 - B. 339 sq. in.
 - C. 424 sq. in.
 - D. 565 sq. in.
- 30 Last year the value of Pat's car was \$8500. This year the value of her car is \$7000.
- Which of the following is closest to the percent decrease in the value of Pat's car?
- A. 82%
 - B. 45%
 - C. 21%
 - D. 18%

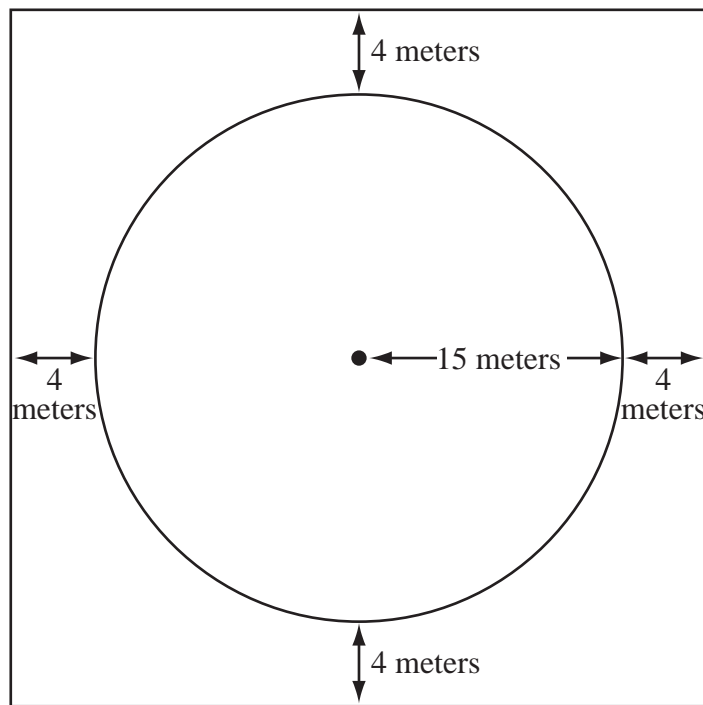
Question 31 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 31 in the space provided in your Student Answer Booklet.

- 31** A helicopter landing pad is in the shape of a square and has a circle painted in its center. The radius of the circle is 15 meters. The shortest distance from each side of the landing pad to the circle is 4 meters, as shown below.

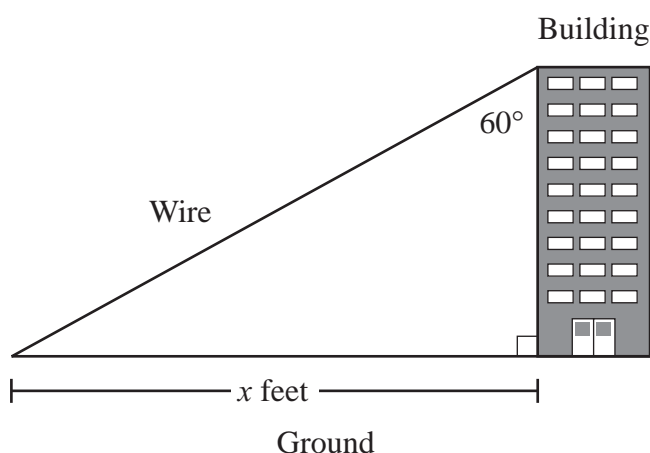
Helicopter Landing Pad



- What is the circumference, in meters, of the circle? Show your work.
- What is the perimeter, in meters, of the landing pad? Show your work.
- What is the area, in square meters, of the circle? Show your work.
- What is the area, in square meters, of the part of the landing pad that is **outside** the circle? Show your work.

Mark your answers to multiple-choice questions 32 through 40 in the spaces provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

- 32 For a movie scene, a stuntman will slide down a wire that is connected from the top of a building to the ground. The wire, the side of the building, and the ground can be represented as the sides of a right triangle, as shown in the figure below.



The height of the building where the wire is attached is 70 feet. Based on the angle measure in the figure, which of the following is closest to the value of x ?

- A. 40.4
- B. 70.0
- C. 121.2
- D. 140.0

- 33 Ellie ordered boxes of short envelopes and boxes of long envelopes for her company.

- Each box of short envelopes contains exactly 80 envelopes.
- Each box of long envelopes contains exactly 50 envelopes.
- Ellie ordered 16 boxes of envelopes.
- The 16 boxes contained 1070 envelopes in all.

What is the total number of boxes of **long** envelopes that Ellie ordered?

- A. 6
- B. 7
- C. 8
- D. 9

- 34 Lisa collected data about the number of days students in her high school were absent and their respective grade point averages. Which of the following would **best** represent the relationship between the number of days absent and grade point average?

- A. stem-and-leaf plot
- B. circle graph
- C. box-and-whisker plot
- D. scatterplot

- 35 When Al worked for an environmental survey company last summer, he took soil samples along a contaminated stream to test for presence of a contaminant. The chart below shows the contamination concentrations recorded at 12 test sites.

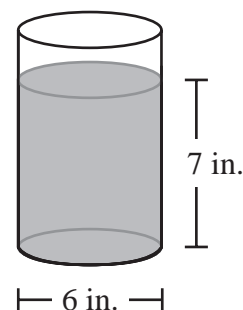
Soil Sample Contamination

Sample Number	Concentration (by Volume)
1	0.001
2	0.020
3	0.006
4	0.100
5	0.001
6	0.001
7	0.070
8	0.001
9	0
10	0.001
11	0
12	0

What is the **range** of the contamination concentrations for these 12 samples?

- A. 0.001
- B. 0.070
- C. 0.099
- D. 0.100

- 36 Maya has a container in the shape of a right circular cylinder. She poured lemonade into the container until the height of the lemonade was 7 inches, as shown in the diagram below.



Based on the dimensions shown in the diagram, which of the following is closest to the volume of the lemonade in the container?

- A. 132 cubic inches
- B. 198 cubic inches
- C. 252 cubic inches
- D. 264 cubic inches

- 37 Quinn bought a new bicycle that cost \$650. He paid for the bicycle by making monthly payments of \$75.

Which of the following equations represents r , the amount of money Quinn still owes after making m monthly payments?

- A. $r = 75 + 650m$
- B. $r = 75 - 650m$
- C. $r = 650 + 75m$
- D. $r = 650 - 75m$

- 38 Shana can choose from 5 greeting cards, 3 colors of writing paper, and 3 kinds of flowers to buy for her friend.

What is the total number of different combinations of 1 greeting card, 1 color of writing paper, and 1 kind of flower that Shana can choose?

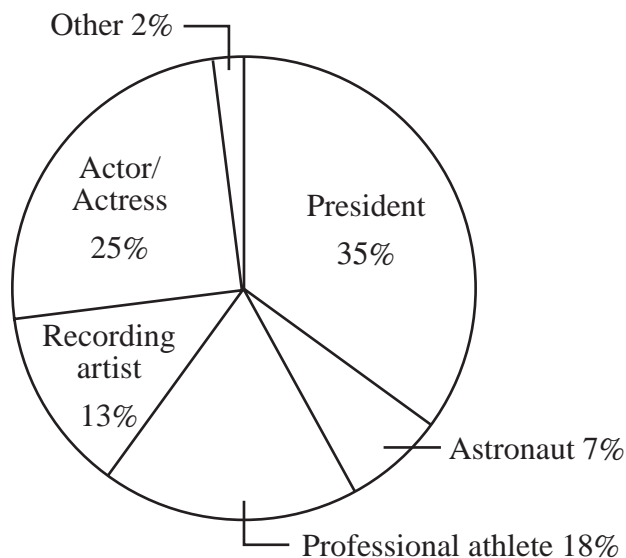
- A. 11
- B. 15
- C. 33
- D. 45

- 39 The top of a rectangular table has a length that is two times its width. The perimeter of the tabletop is 144 inches. What is the width of the tabletop?

- A. 12 inches
- B. 24 inches
- C. 36 inches
- D. 72 inches

- 40 A survey was given to students at Dubois High School. The students were asked to choose their dream job from a list. The percent of students choosing each dream job is shown in the circle graph below.

Students' Dream Jobs



A total of 2000 students were surveyed. What is the number of students who chose "Astronaut" as their dream job?

- A. 7
- B. 14
- C. 70
- D. 140

Questions 41 and 42 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 41 in the space provided in your Student Answer Booklet.

- 41** Miguel needs to rent a waste dumpster for a construction project. The dumpster rental costs are described in the box below.

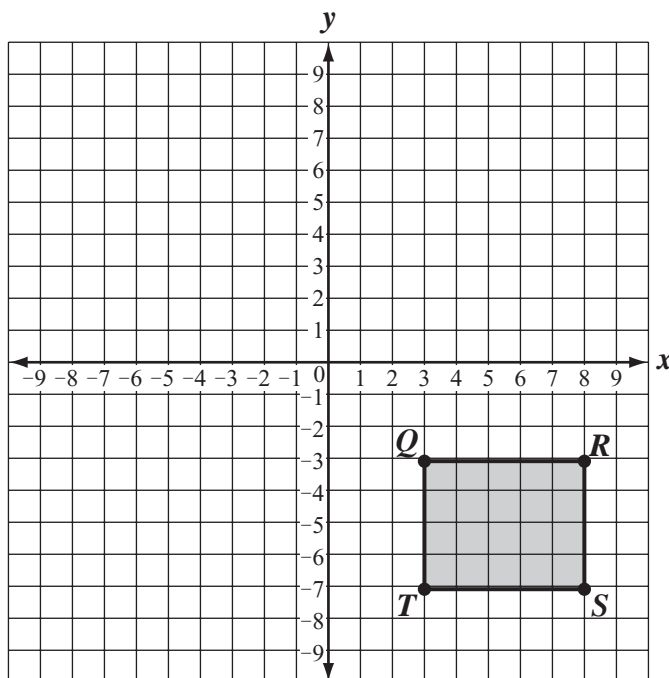
Total Cost of Dumpster Rental
Delivery fee: \$210
PLUS
\$20 rental charge each day

- What is the total cost of renting a dumpster for 8 days? Show or explain how you got your answer.
- Write an equation that could be used to compute the total cost, y , in dollars, of renting the dumpster for x days.
- Miguel's total cost of renting a dumpster must be less than \$1000. What is the greatest number of whole days that Miguel can rent the dumpster? Show or explain how you got your answer.
- Rhonda will also rent a dumpster.
 - Miguel will rent his dumpster for m days.
 - Rhonda will rent her dumpster for r days.

Write an expression to represent the difference between Rhonda's total rental cost and Miguel's total rental cost. Show or explain how you got your answer.

Write your answer to question 42 in the space provided in your Student Answer Booklet.

- 42 Rectangle $QRST$ is shown on the coordinate grid below.



- a. If rectangle $QRST$ is translated so that the image of point S is the point located at $(-3, -6)$, what are the coordinates of the image of point Q ? Show or explain how you got your answer.

On the grid in your Student Answer Booklet, copy the x -axis, the y -axis, and rectangle $QRST$ shown above. Be sure to label points Q , R , S , and T .

- b. Rectangle $Q'R'S'T'$ is the reflection of rectangle $QRST$ over the x -axis. On your grid, draw rectangle $Q'R'S'T'$. Be sure to label points Q' , R' , S' , and T' .
- c. Rectangle $Q''R''S''T''$ is the reflection of rectangle $Q'R'S'T'$ over the y -axis. On your grid, draw rectangle $Q''R''S''T''$. Be sure to label points Q'' , R'' , S'' , and T'' .
- d. As shown from parts (b) and (c), rectangle $Q''R''S''T''$ is the result of two reflections of rectangle $QRST$. It is also the result of one rotation of rectangle $QRST$ about the origin. What is the angle of rotation? Show or explain how you got your answer.

Massachusetts Comprehensive Assessment System Grade 10 Mathematics Reference Sheet

AREA FORMULAS

square $A = s^2$

rectangle $A = bh$

parallelogram $A = bh$

triangle $A = \frac{1}{2}bh$

trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

circle $A = \pi r^2$

LATERAL SURFACE AREA FORMULAS

right rectangular prism $LA = 2(hw) + 2(lh)$

right circular cylinder $LA = 2\pi rh$

right circular cone $LA = \pi r\ell$
(ℓ = slant height)

right square pyramid $LA = 2s\ell$
(ℓ = slant height)

TOTAL SURFACE AREA FORMULAS

cube $SA = 6s^2$

right rectangular prism $SA = 2(lw) + 2(hw) + 2(lh)$

sphere $SA = 4\pi r^2$

right circular cylinder $SA = 2\pi r^2 + 2\pi rh$

right circular cone $SA = \pi r^2 + \pi r\ell$
(ℓ = slant height)

right square pyramid $SA = s^2 + 2s\ell$
(ℓ = slant height)

VOLUME FORMULAS

cube $V = s^3$
(s = length of an edge)

right rectangular prism $V = lwh$

OR

$V = Bh$
(B = area of a base)

sphere $V = \frac{4}{3}\pi r^3$

right circular cylinder $V = \pi r^2 h$

right circular cone $V = \frac{1}{3}\pi r^2 h$

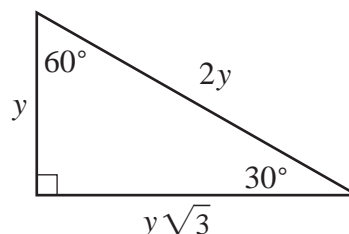
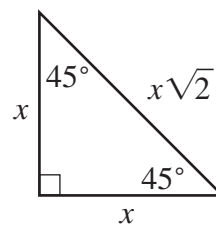
right square pyramid $V = \frac{1}{3}s^2 h$

CIRCLE FORMULAS

$C = 2\pi r$

$A = \pi r^2$

SPECIAL RIGHT TRIANGLES



Mathematics Retest
November 2008 Released Items:
Reporting Categories, Standards, and Correct Answers*

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC/SA)*
1	35	<i>Number Sense and Operations</i>	10.N.2	A
2	35	<i>Number Sense and Operations</i>	10.N.1	B
3	35	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	B
4	36	<i>Patterns, Relations, and Algebra</i>	10.P.1	D
5	36	<i>Number Sense and Operations</i>	10.N.1	A
6	36	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	C
7	36	<i>Geometry</i>	10.G.10	B
8	37	<i>Patterns, Relations, and Algebra</i>	10.P.3	C
9	37	<i>Number Sense and Operations</i>	10.N.3	B
10	37	<i>Geometry</i>	10.G.1	B
11	37	<i>Patterns, Relations, and Algebra</i>	10.P.1	D
12	38	<i>Number Sense and Operations</i>	10.N.4	C
13	38	<i>Measurement</i>	10.M.4	A
14	38	<i>Patterns, Relations, and Algebra</i>	10.P.4	B
15	39	<i>Number Sense and Operations</i>	10.N.2	75
16	39	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	3
17	40	<i>Patterns, Relations, and Algebra</i>	10.P.8	
18	41	<i>Patterns, Relations, and Algebra</i>	10.P.5	2 or -3
19	41	<i>Geometry</i>	10.G.7	(9, 4)
20	42	<i>Data Analysis, Statistics, and Probability</i>	10.D.2	
21	43	<i>Number Sense and Operations</i>	10.N.1	
22	44	<i>Number Sense and Operations</i>	10.N.1	D
23	44	<i>Measurement</i>	10.M.2	A
24	44	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	A
25	45	<i>Measurement</i>	10.M.1	C
26	45	<i>Patterns, Relations, and Algebra</i>	10.P.2	A
27	45	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	C
28	46	<i>Patterns, Relations, and Algebra</i>	10.P.7	D
29	46	<i>Measurement</i>	10.M.2	C
30	46	<i>Number Sense and Operations</i>	8.N.10	D
31	47	<i>Measurement</i>	10.M.1	
32	48	<i>Geometry</i>	10.G.6	C
33	48	<i>Patterns, Relations, and Algebra</i>	10.P.8	B
34	48	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	D
35	49	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	D
36	49	<i>Measurement</i>	10.M.2	B
37	49	<i>Patterns, Relations, and Algebra</i>	10.P.7	D
38	50	<i>Data Analysis, Statistics, and Probability</i>	8.D.4	D
39	50	<i>Patterns, Relations, and Algebra</i>	10.P.7	B
40	50	<i>Data Analysis, Statistics, and Probability</i>	10.D.1	D
41	51	<i>Patterns, Relations, and Algebra</i>	10.P.7	
42	52	<i>Geometry</i>	10.G.9	

* Answers are provided here for multiple-choice items and short-answer items only. Each open-response item has its own set of scoring guidelines, which allow for valid alternate interpretations and responses.

